



FCC Id: 2AM8R-DMS-10

FCC Verification Test Report

Client Information:

Applicant: Netradyne Inc

<u>Applicant add.</u>: 9171 Towne Centre Drive, Suite 110 San Diego, CA 92122 <u>Manufacturer:</u> Netradyne Inc

Manufacturer add.: 9171 Towne Centre Drive, Suite 110 San Diego, CA 92122.

Product Information:

Product Name: DMS Sensor

<u>Model No.: DMS-10</u> Serial No: 001252400146



Brand Name:

Applied Standard:

FCC Part15-B:2014

Laboratory Details:

AA Electro Magnetic Test Laboratory Private Limited Plot No174, Udyog Vihar-Phase4, Sector18, Gurgaon, Haryana, India

Date of Receipt: July. 07, 2024

Date of Test: July. 16, 2024 ~ July. 16, 2024

Date of Issue: Aug. 23, 2024 Declaration of Conformity: <u>Test Result:</u> In Compliance/Pass Declaration of conformity of the results is based as per the standard limits

This device has been tested and found to comply with the stated standard(s) and indicated in the test report and are applicable only to the tested sample identified in the report.Note: This report shall not be reproduced except in full, without the written approval of AA Electro Magnetic Test Laboratory Private Limited, this document may be altered or revised by AA Electro Magnetic Test Laboratory Private Limited, personal only, and shall be noted in the revision of the document. This test report must not be used by the client to claim product endorsement.

Prepared By (+ signature) Ankur Kumar:

Reviewed & Approved by: (+ signature)

Dr. Lenin Raja (Authorized Representative)

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Plot No.174, Udyog Vihar Phase 4, Sector -18, Gurgaon -122016, Haryana, India Contact:0124-4235350, 4145343; e-mail: info @aaemtlabs.com; Website: www.aaemtlabs.com Decision Rule Used: Simple Acceptance (i.e., w = 0, Acceptance Limit = Tolerance Limit) as Per ILAC-G8:09/2019 AAEMT/A2LA/TRF/ FCC-15B/24_01_REV0





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2 Test Summary

Test	Test Requirement	Test Method	Criterion	Result					
Conducted Emission 150kHz to 30MHz	FCC Part15-B:2014	ANSI C63.4 & Clause 15.07	Limits	N/A					
Radiated Emissions 30MHz to 18 GHz	Emissions o 18 GHz FCC Part15-B:2014 ANSI C63.4& Clause 15.09		Limit Class B	PASS					
N/A is an abbreviation for Not Applicable.									

Note: The EUT input is DC Only therefore, conducted emission test is not applicable as per FCC rules.

Product documentation

The specification used by the manufacturer to define the performance criteria for the testing required by this standard shall be made available to the user upon request.





2.1 Measurement Uncertainty

The report uncertainty of measurement $y \pm U$, where expended uncertainty U is based on a standard uncertainty Multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95%.

No.	Item	Frequency Range	U , Value	
1	Radiated Emission Test	30MHz~1GHz	± 3.87 dB	
2	Radiated Emission Test	1GHz~18GHz	± 3.98 dB	





3 Test Facility

The test facility is recognized, certified or accredited by the following organizations:

ILAC / NABL Accreditation No.: TC-8597

Three 3m Semi-Anechoic Chamber, 1 full-Anechoic chamber and 2 Shielding Rooms of AA Electro Magnetic Test Laboratory Private Limited have been registered by National Accreditation Board for Testing and Calibration Laboratories (NABL).

ILAC -A2LA Accreditation No.: 5593.01

Three 3m Semi-Anechoic Chamber, 1 full-Anechoic chamber and 2 Shielding Rooms of AA Electro Magnetic Test Laboratory Private Limited have been registered American Association of Laboratory Accreditation (A2LA.)

FCC- Recognition No.: 137777

Three 3m Semi-Anechoic Chamber, 1 full-Anechoic chamber and 2 Shielding Rooms of AA Electro Magnetic Test Laboratory Private Limited have been registered by Federal Communications Commission (FCC).

ISED Recognition No.: 26046

Three 3m Semi-Anechoic Chamber, 1 full-Anechoic chamber and 2 Shielding Rooms of AA Electro Magnetic Test Laboratory Private Limited have been registered by Institute for Social and Economic Development.(ISED)

VCCI- Registration No: 4053

Three 3m Semi-Anechoic Chamber, 1 full-Anechoic chamber and 2 Shielding Rooms of AA Electro Magnetic Test Laboratory Private Limited have been registered by Voluntary Control Council for Interference.(VCCI)

TEC Designation No.: IND063

Three 3m Semi-Anechoic Chamber, 1 full-Anechoic chamber and 2 Shielding Rooms of AA Electro Magnetic Test Laboratory Private Limited have been registered by Telecommunication Engineering (TEC) Center.

3.1 Deviation from standard

None

3.2 Abnormalities from standard conditions

None





4 General Information

4.1 General Description of EUT

Netradyne Inc
9171 Towne Centre Drive, Suite 110 San Diego, CA 92122
DMS Sensor
DMS-10
DMS-10A, DMS-10B
001252400146
M netradyne
001-10-00008
N/A
EUT Input: USB 5V
N/A
Good
See the specific Note / Annexure if any in the whole /full report/NA
SN 001252400146 MODEL DMS-10

Plot No.174, Udyog Vihar Phase 4, Sector -18, Gurgaon -122016, Haryana, India

ZAM8R-DI

23098-DM

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4.2 EUT Test Mode

Mode 1	The EUT in full transmission mode with USB supply.
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4.3 Description of Test setup







4.4 Test Peripheral List

No.	Equipment	Manufacturer	EMC Compliance	Model No.	Serial No.	Power cord	signal cable
1	N/A	N/A	N/A	N/A	N/A	N/A	N/A

4.5 EUT Peripheral List

No.	Equipment	Manufacturer	EMC Compliance	Model No.	Serial No.	Power cord	signal cable
1.	N/A	N/A	N/A	N/A	N/A	N/A	N/A





5 Equipments List for All Test Items

	Radiation Test Equipment								
No	Test Equipment	Manufacturer	Model No Serial No		Cal. Date	Cal. Due Date			
1	EMI- Test Receiver	Rohde and Schwarz	ESIB26 509371		2023/06/11	2025/06/10			
2	Spectrum Analyser	R&S	FSP	-	2024/01/10	2025/01/10			
3	Loop antenna	DA ZE Beijing	ZN30900C	18052	2021/09/15	2024/09/15			
4	Horn antenna	DA ZE Beijing	ZN30701	18011	2023/09/11	2026/09/10			
5	Horn antenna	DA ZE Beijing	ZN30702	18006	2023/09/11	2026/09/10			
6	Horn antenna	DA ZE Beijing	ZN30703	18005	2023/09/11	2026/09/10			
7	Pre-Amplifier	KELIANDA	LNA-0009295	-	2024/01/10	2025/01/10			
8	Pre-Amplifier	HP	8447FOPTH64	-	2024/01/10	2025/01/10			
9	Bi - Log Antenna	Schwarzbeck	VULB9161	-	2023/09/11	2026/09/10			





5.1 Emission Test Results

5.2 Radiated Emission Measurement

Limits of Radiated Emission Measurement (Below 1GHz)

		lass A (3m)	Class B (3m)						
Frequency (MHz)	Quasi-Pea	ak dB(µV/m)	Quasi-Peak dB(µV/m						
30 ~ 88		49.5	4	0.0					
88 ~ 206		54.0	4	3.5					
216 ~ 960		57.0	4	6.0					
Above 960		60.0	5.	4.0					
Limits of Radiated Emis	sion Measurement (A	bove 1GHz)							
		lass A (3m)	Class B (3m)						
Frequency (MHz)	Peak dB(µV/m)	Average $dB(\mu V/m)$	Peak dB(µV/m)	Average dB(µV/m)					
1000~18000	80	60	74	54					
Detector:		Peak for pre-scan (120kHz resolution bandwidth)							
		Quasi-Peak if maximum peak within 6dB of limit							

5.2.1 E.U.T. Operation

Temperature:	24.7°C	Humidity:	53% RH	RH Atmospheric Pressure:		Kpa
Test Mode:	Mode 1					







peripherals were placed at a distance of 10cm between each other. Both horizontal and vertical antenna polarities were tested.





5.2.3 Measurement Data

An initial pre-scan was performed in the 3m chamber using the spectrum analyzers in peak detection mode. The EUT was measured by Bi-log/Horn antenna with 2 orthogonal polarities and peak emissions from the EUT were detected within 6dB of the class B limit line.

The following quasi-peak measurements were performed on the EUT.





Report No: AAEMT/EMC/240702-02-01



No.	Frequency (MHz)	Factor (dBuV/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	35.7617	-12.71	37.50	24.79	40.00	-15.21	QP
2	79.6764	-16.11	38.56	22.45	40.00	-17.55	QP
3	787.4749	-0.50	28.09	27.59	46.00	-18.41	QP
4	856.7597	0.01	27.20	27.21	46.00	-18.79	QP
5	893.6557	0.39	27.18	27.57	46.00	-18.43	QP
6	945.3336	-0.22	33.27	33.05	46.00	-12.95	QP

*Maximum Data

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Plot No.174, Udyog Vihar Phase 4, Sector -18, Gurgaon -122016, Haryana, India

Contact:0124-4235350, 4145343; e-mail: info @aaemtlabs.com; Website: <u>www.aaemtlabs.com</u> Decision Rule Used: Simple Acceptance (i.e., w = 0, Acceptance Limit = Tolerance Limit) as Per ILAC-G8:09/2019 AAEMT/A2LA/TRF/ FCC-15B/24_01_REV0







Plot No.174, Udyog Vihar Phase 4, Sector -18, Gurgaon -122016, Haryana, India

Contact:0124-4235350, 4145343; e-mail: info @aaemtlabs.com; Website: <u>www.aaemtlabs.com</u> Decision Rule Used: Simple Acceptance (i.e., w = 0, Acceptance Limit = Tolerance Limit) as Per ILAC-G8:09/2019 AAEMT/A2LA/TRF/ FCC-15B/24_01_REV0







No.	Frequency (MHz)	Factor (dBuV/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	1268.057	-4.26	48.92	44.66	74.00	-29.34	peak
2	1268.057	-4.26	37.84	33.58	54.00	-20.42	AVG
3	2173.137	-3.16	47.18	44.02	74.00	-29.98	peak
4	2185.762	-3.14	36.09	32.95	54.00	-21.05	AVG
5	4861.299	0.45	44.86	45.31	74.00	-28.69	peak
6	4917.942	0.52	33.23	33.75	54.00	-20.25	AVG
7	6532.008	-5.03	56.67	51.64	74.00	-22.36	peak
8	6569.953	-3.85	44.97	41.12	54.00	-12.88	AVG
9	10144.496	5.22	44.97	50.19	74.00	-23.81	peak
10	10262.700	5.22	30.53	35.75	54.00	-18.25	AVG
11	15394.017	9.97	42.53	52.50	74.00	-21.50	peak
12	15663.856	9.85	31.10	40.95	54.00	-13.05	AVG

*Maximum Data

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1 1268.057 21.60 23.59 45.19 74.00 -28.81 peak 2 1275.423 21.61 11.49 33.10 54.00 -20.90 AVG 3 2062.752 23.13 8.62 31.75 54.00 -22.25 AVG 4 2074.735 23.19 20.11 43.30 74.00 -30.70 peak 5 5953.844 35.83 10.73 46.56 74.00 -27.44 peak 6 6023.218 36.24 -1.64 34.60 54.00 -19.40 AVG 7 6608.119 32.51 18.36 50.87 74.00 -23.13 peak 8 6646.506 33.78 5.05 38.83 54.00 -15.17 AVG 9 12569.175 47.75 5.13 52.88 74.00 -21.12 peak 10 12642.191 47.82 -8.42 39.40 54.00 -14.60 AVG 11 16312.019 47.44 6.50 53.94 74.00 -20.06 peak	No.	Frequency (MHz)	Factor (dBuV/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
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3 2062.752 23.13 8.62 31.75 54.00 -22.25 AVG 4 2074.735 23.19 20.11 43.30 74.00 -30.70 peak 5 5953.844 35.83 10.73 46.56 74.00 -27.44 peak 6 6023.218 36.24 -1.64 34.60 54.00 -19.40 AVG 7 6608.119 32.51 18.36 50.87 74.00 -23.13 peak 8 6646.506 33.78 5.05 38.83 54.00 -15.17 AVG 9 12569.175 47.75 5.13 52.88 74.00 -21.12 peak 10 12642.191 47.82 -8.42 39.40 54.00 -14.60 AVG 11 16312.019 47.44 6.50 53.94 74.00 -20.06 peak 12 16406.777 47.46 -6.44 41.02 54.00 -12.98 AVG	2	1275.423	21.61	11.49	33.10	54.00	-20.90	AVG
4 2074.735 23.19 20.11 43.30 74.00 -30.70 peak 5 5953.844 35.83 10.73 46.56 74.00 -27.44 peak 6 6023.218 36.24 -1.64 34.60 54.00 -19.40 AVG 7 6608.119 32.51 18.36 50.87 74.00 -23.13 peak 8 6646.506 33.78 5.05 38.83 54.00 -15.17 AVG 9 12569.175 47.75 5.13 52.88 74.00 -21.12 peak 10 12642.191 47.82 -8.42 39.40 54.00 -14.60 AVG 11 16312.019 47.44 6.50 53.94 74.00 -20.06 peak 12 16406.777 47.46 -6.44 41.02 54.00 -12.98 AVG	3	2062.752	23.13	8.62	31.75	54.00	-22.25	AVG
5 5953.844 35.83 10.73 46.56 74.00 -27.44 peak 6 6023.218 36.24 -1.64 34.60 54.00 -19.40 AVG 7 6608.119 32.51 18.36 50.87 74.00 -23.13 peak 8 6646.506 33.78 5.05 38.83 54.00 -15.17 AVG 9 12569.175 47.75 5.13 52.88 74.00 -21.12 peak 10 12642.191 47.82 -8.42 39.40 54.00 -14.60 AVG 11 16312.019 47.44 6.50 53.94 74.00 -20.06 peak 12 16406.777 47.46 -6.44 41.02 54.00 -12.98 AVG	4	2074.735	23.19	20.11	43.30	74.00	-30.70	peak
6 6023.218 36.24 -1.64 34.60 54.00 -19.40 AVG 7 6608.119 32.51 18.36 50.87 74.00 -23.13 peak 8 6646.506 33.78 5.05 38.83 54.00 -15.17 AVG 9 12569.175 47.75 5.13 52.88 74.00 -21.12 peak 10 12642.191 47.82 -8.42 39.40 54.00 -14.60 AVG 11 16312.019 47.44 6.50 53.94 74.00 -20.06 peak 12 16406.777 47.46 -6.44 41.02 54.00 -12.98 AVG	5	5953.844	35.83	10.73	46.56	74.00	-27.44	peak
7 6608.119 32.51 18.36 50.87 74.00 -23.13 peak 8 6646.506 33.78 5.05 38.83 54.00 -15.17 AVG 9 12569.175 47.75 5.13 52.88 74.00 -21.12 peak 10 12642.191 47.82 -8.42 39.40 54.00 -14.60 AVG 11 16312.019 47.44 6.50 53.94 74.00 -20.06 peak 12 16406.777 47.46 -6.44 41.02 54.00 -12.98 AVG	6	6023.218	36.24	-1.64	34.60	54.00	-19.40	AVG
8 6646.506 33.78 5.05 38.83 54.00 -15.17 AVG 9 12569.175 47.75 5.13 52.88 74.00 -21.12 peak 10 12642.191 47.82 -8.42 39.40 54.00 -14.60 AVG 11 16312.019 47.44 6.50 53.94 74.00 -20.06 peak 12 16406.777 47.46 -6.44 41.02 54.00 -12.98 AVG	7	6608.119	32.51	18.36	50.87	74.00	-23.13	peak
9 12569.175 47.75 5.13 52.88 74.00 -21.12 peak 10 12642.191 47.82 -8.42 39.40 54.00 -14.60 AVG 11 16312.019 47.44 6.50 53.94 74.00 -20.06 peak 12 16406.777 47.46 -6.44 41.02 54.00 -12.98 AVG	8	6646.506	33.78	5.05	38.83	54.00	-15.17	AVG
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11 16312.019 47.44 6.50 53.94 74.00 -20.06 peak 12 16406.777 47.46 -6.44 41.02 54.00 -12.98 AVG	10	12642.191	47.82	-8.42	39.40	54.00	-14.60	AVG
12 16406.777 47.46 -6.44 41.02 54.00 -12.98 AVG	11	16312.019	47.44	6.50	53.94	74.00	-20.06	peak
	12	16406.777	47.46	-6.44	41.02	54.00	-12.98	AVG

*Maximum Data





6.2.4 Test Setup photograph







****END OF REPORT****

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